What is claimed is:

1. A light-emitting device comprising:

a light-emitting layer which emits light by electroluminescence;

a pair of electrode layers for applying an electric field to the light-emitting layer; and

an optical element for causing light generated in the light-emitting layer to be transmitted in a predetermined direction,

wherein the optical element forms an incomplete photonic band which inhibits spontaneous emission of light in one dimension or two dimensions; and

wherein light generated in the light-emitting layer is emitted by inhibiting spontaneous emission in two dimensions.

2. A light-emitting device comprising a substrate and a light-emitting section,

wherein the light-emitting section includes:

a light-emitting layer which emits light by electroluminescence;

a pair of electrode layers for applying an electric field to the light-emitting layer;

an optical element for causing light generated in the light-emitting layer to be transmitted in a predetermined direction; and

an insulating layer which is disposed between the pair

of electrode layers, partially has an opening through which current is supplied to the light-emitting layer, and functions as a current blocking layer which determines a region in which current flows,

wherein the optical element forms an incomplete photonic band which inhibits spontaneous emission of light in one dimension or two dimensions; and

wherein light generated in the light-emitting layer is emitted by inhibiting spontaneous emission in two dimensions.

3. The light-emitting device as defined in claim 2, further comprising a waveguide section integrally formed with the light-emitting section,

wherein the waveguide section includes:

a core layer which is integrally continuous with at least part of the optical element; and

a cladding layer which is optically continuous with the insulating layer.

4. A light-emitting device comprising a substrate, a light-emitting section and a waveguide section which transmits light from the light-emitting section, the light-emitting and waveguide sections being integrally formed on the substrate,

wherein the light-emitting section includes:

a light-emitting layer which emits light by electroluminescence;

a pair of electrode layers for applying an electric field

to the light-emitting layer;

an optical element for causing light generated in the light-emitting layer to be transmitted in a predetermined direction; and

an insulating layer which is disposed between the pair of electrode layers and functions as a cladding layer,

wherein the waveguide section includes:

a core layer which is integrally continuous with at least part of the optical element; and

a cladding layer optically continuous with the insulating layer,

wherein the optical element forms an incomplete photonic band which inhibits spontaneous emission of light in one dimension or two dimensions, and

wherein light generated in the light-emitting layer is emitted by inhibiting spontaneous emission in two dimensions.

5. The light-emitting device as defined in claim 1,

wherein the optical element is formed so that the energy level of emission spectrum of the light-emitting layer includes the energy level at a band edge in a band formed by the optical element.

6. The light-emitting device as defined in claim 1,

wherein the optical element forms in an XY surface an incomplete photonic band of one dimension having a refractive index distribution which is periodic in one direction; and

wherein the light emitting device further comprises another optical element which inhibits spontaneous emission of light in two dimensions in combination with the incomplete photonic band of the above optical element.

7. The light-emitting device as defined in claim 1,

wherein the optical element forms in an XY surface an incomplete photonic band having a refractive index distribution which is periodic in the X-direction and the Y-direction; and

wherein the incomplete photonic band includes columnar-shaped first medium layers arranged in a shape of a tetragonal lattice and a second medium layer formed between the first medium layers.

8. The light-emitting device as defined in claim 1,

wherein the optical element forms in an XY surface an incomplete photonic band having a refractive index distribution which is periodic in first, second and third directions; and

wherein the incomplete photonic band includes columnar-shaped first medium layers and a second medium layer formed between the first medium layers.

9. The light-emitting device as defined in claim 8,

wherein the first medium layer in the optical element is arranged in a shape of a triangular lattice.

10. The light-emitting device as defined in claim 8,

wherein the first medium layer in the optical element is arranged in the shape of a honeycomb lattice.

11. The light-emitting device as defined in claim 2, wherein at least part of the light-emitting layer is provided within the opening formed in the insulating layer.

12. The light-emitting device as defined in claim 2, wherein:

the opening in the insulating layer faces the optical element; and

the opening is a slit extending in a periodic direction of the optical element.

13. The light-emitting device as defined in claim 2, wherein part of the light-emitting layer forms part of medium layers in the optical element.

14. The light-emitting device according claim 2, wherein at least the light-emitting section is covered with a protective layer.

15. The light-emitting device as defined in claim 1, wherein the light-emitting layer includes an organic light-emitting material.

16. The light-emitting device as defined in claim 1, further comprising at least one of a hole transport layer and an electron

transport layer.

17. The light-emitting device as defined in claim 16, wherein the hole transport layer or the electron transport layer is one type of medium layer in the optical element.

18. The light-emitting device as defined in claim 3, wherein an optical fiber is provided in the waveguide section such that a core of the optical fiber is in a predetermined position relating to the core layer.